

Basic Trig. Equations

Name _____ Date _____ Period _____

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

Find all real numbers that satisfy the equation.

1) $\cos x = 0$ 1) _____

2) $\sin(x) + 2 = 0$ 2) _____

3) $\sin x = -1$ 3) _____

4) $\tan x = -1$ 4) _____

5) $\cos x = 1/2$ 5) _____

6) $\sin x = \frac{\sqrt{2}}{2}$ 6) _____

7) $\tan(x) = \frac{1}{\sqrt{3}}$ 7) _____

8) $\cos x = -\frac{\sqrt{3}}{2}$ 8) _____

Find all angles in degrees that satisfy the equation. Round approximate answers to the nearest tenth of a degree.

9) $2 \cos (\alpha) - \sqrt{2} = 0$

9) _____

10) $\tan (\alpha) - 1 = 0$

10) _____

11) $\cos \alpha = 0.873$

11) _____

12) $\tan \alpha = 5.42$

12) _____

Solve the equation for $0 \leq t < 2\pi$. Approximate the solution to two decimal places.

13) $\cos t = 0.66$

13) _____

Solve the equation for $0 \leq t < 2\pi$. Approximate the solution to four decimal places.

14) $\sqrt{6} \tan (t) - 1 = 0$

14) _____

15) $\sqrt{5} \cos (t) + 2 = 0$

15) _____

Solve the equation.

16) $\frac{\sin \alpha}{23.4} = \frac{\sin 67.2^\circ}{25.9}$ for $0^\circ \leq \alpha \leq 90^\circ$

16) _____

Solve the equation for x.

17) $y = -6 \sin(x) + 2$, where $-\pi/2 \leq x \leq \pi/2$

17) _____

Find all real numbers that satisfy the equation. Round approximate answers to 2 decimal places.

18) $\frac{\sin 33.2^\circ}{a} = \frac{\sin 45.6^\circ}{13.7}$

18) _____

19) $3 = 5 \sin(x) + 1$

19) _____

Find the exact value of the expression without using a calculator or table.

20) $\sin^{-1}\left(\frac{1}{2}\right)$

20) _____

21) $\cos^{-1}\left(\frac{-1}{2}\right)$

21) _____

22) $\arctan(-1)$

22) _____

23) $\sin(\pi/3)$

23) _____

24) $\cos(-\pi/2)$

24) _____

25) $\sin^{-1}(-1)$

25) _____

Use the sum/difference identities to simplify the expression. Do not use a calculator.

26) $\cos(2y) \cos(y) - \sin(2y) \sin(y)$

26) _____